

3. On the Classification of the Coleoptera of the Subfamily
Languriides. By the Rev. H. S. GORHAM, F.Z.S. &c.

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Family EROTYLIDÆ.

Subfamily LANGURIIDES.

While working out the Languriidæ of Messrs. Godman and Salvin's collection for the 'Biologia Centrali-Americana,' I have had to examine a great portion of the species and proposed genera in my own and other collections from all parts of the world, with a view to ascertain whether any characters existed by which their classification could be placed on a natural basis. The genera, and in most cases the subfamilies, which exist in the New World are distinct from those of the Old. It was to be supposed *à priori* that the *Languriæ* would not be an exception, yet, as is well known, the species from both regions often bear a very close resemblance, and at first sight might naturally be presumed to belong to the same genera. Mr. Crotch proposed a few genera in his descriptive Catalogue; but that work was so much hurried that his diagnoses are too short; they hardly amount to more than the indication of what, with his true entomological instinct, he saw would prove the types of new genera. Nevertheless, a close examination of the species enables me to state that these genera are, in most cases at least, well founded, but that other and greater combination of characters are needed for their proper definition. At the same time I find that many more genera must be made if we are to treat this group as the progress of biological science requires, and to express the affinities and differences of the minor groups into which it can be subdivided by a binomial nomenclature.

In order to make certain of the position of the group, I have dissected a considerable number, and considered the structure of the various parts of the body in comparison with those of the Erotylidæ, Phytophaga, and various Clavicorn Coleoptera; and I come to the conclusion that they can nowhere be better placed than as a subfamily of the Erotylidæ. Dr. Sharp, at my request, made a careful dissection of one of the largest species, and he has pointed out to me that the statement of M. Chapuis in the 'Genera des Coléoptères' (although I do not know if he is responsible for it), that the metathoracic episterna and epimera are without apparent distinction, is incorrect; these structural plates of the pleuræ are quite apparent, though not to be easily seen, and only as small points, until the elytra are removed and the side exposed. The epimera will then be found in close proximity with, and lying above, the episterna, but rather more dorsal in position, and nearly or quite covered by the elytral epipleuræ. Lacordaire did not include the *Languriæ* in the Monograph of the Erotylides; but any one who will read his general remarks will see that he was not of MacLeay's opinion, that these insects had any

close affinity with *Cerylon*, but simply was doubtful whether, with Latreille, their proper place was with the Erytolidæ, or whether it should be with *Eumorphus*. The opinion which has been put forward that they might be very much modified Phytophaga is negatived by the fact that the tarsi are five-jointed, the small fourth joint, which is like a nodule at the base of the claw-joint, being closely analogous to the similar joint in both the Erytylidæ and Endomychidæ, though the alliance is greater with the former than the latter family, in which there are but four joints inclusive, while in both Erytylidæ and Languriæ there are five.

I shall now give a summary of the characters to which I have paid especial attention, and upon which this attempt at classification of these Beetles is founded.

1. *The Head*.—The antennæ are eleven-jointed without exception; the two basal joints are short and stout, not very different in length, the third rather longer than these or succeeding joints; the four apical joints are pubescent, those preceding them either glabrous (the more evolved form as in *Pachylanguria*) or clothed with hairs.

The ocular striola is a groove above the canthus or rim of the eye and is of great use; it is absent in certain genera, very distinct in others, and modified in degree of fineness or in length; in others, from it in front starts a sharp ridge, forming the upper edge of the socket of the antennæ and bordering the epistome. This latter is the part of the head immediately before the labrum, and both afford some useful characters. On the occiput are frequently found very minute raised ridges, or carinæ, and these are the organ of stridulation. Sometimes they are so obsolete that the greatest pains is necessary to trace their rudiments, or more correctly their nascent origins. I do not consider them of importance for classification, nor even as truly generic characters. The eyes themselves are either coarsely or quite finely granulated (*i. e.* the facets are like a cluster of ocelli, or are much modified so as to approach the more highly evolved eyes with even surfaces). These give generic characters, but, as in the Cleridæ, do not serve for higher aggregates.

The palpi, maxillæ, labium, or mentum are not variable to any great extent. The labrum varies in degree of length, but I have not been able to use the trophi.

2. *The Thorax*.—The pronotum is variable in shape, but does not afford generic characters; the presence of basal sulci indicates affinity with both Erytylidæ and Endomychidæ, but is also with many of the characters common in a less degree in the Phytophaga. The prosternum and mesosternum bear a singular resemblance to those of the two first-named families, and, as in them, afford good and constant generic characters; the reflexed edge of the pronotum has no lines nor plication (such as is found in certain Malacoderms), and I do not find any characters of more than specific value there.

The metasternum with its episterna and epimera will no doubt ultimately prove as valuable as the prosternum; I regret that I cannot work out the characters of this part, mainly because it cannot be done properly without spoiling the specimens by dissection.

3. *The Abdomen.*—This is remarkably uniform in all the genera, yet affords two most trenchant and easily observed distinctions, viz. the presence or absence and variety of two lines, sometimes raised, sometimes impressed upon the intercoxal process of the basal segment; their presence is a peculiarity of the Asiatic species. And, secondly, the excision of the apical segment, which rarely takes place and usually in the male sex only.

4. *Appendages.*—The elytra: these are sometimes quite smooth at the apices, or they are denticulate, excised, truncate, or divaricating; these are partly generic but partly divisional characters. Thus the finely denticulate apex is nearly, or quite, a peculiarity of the American species. The legs: the femora are either smooth in both sexes, or finely granulate or denticulate in the males; the tibiæ very rarely bent or sinuous like those of Endomychidæ, often incrassate as in Erotylidæ, never toothed as in the former. The tarsi: I have examined the soles with the view of ascertaining if any such differences as Mr. Bates has used in the Carabidæ exist; and I find two types of feet, one with spongiose close-set papillæ, the other similar but with ragged rough hairs in addition, and much hairier above and on the sides. The latter is the usual American type, the former the Eastern or Asiatic: modifications occur in both parts of the world; and I venture to think that in this I have found a clue to the natural arrangement of genera in this subfamily, but yet one that must be taken in combination with the more important of the characters mentioned, as in certain genera an intermediate form occurs. This is, however, the case whatever be the distinctive structure selected for the purpose of classification; cases will always present themselves in which any one character fails to give any response, and we must have recourse to others known to be correlated with it to satisfy our inquiries.

I may here acknowledge the contributions to our knowledge of this group made by Mr. Lewis and the Rev. W. W. Fowler. Of course I have made use of every kind of information I could find already published, for which I feel no apology is needed.

The following is an attempt to place the general results of my examination in a tabular form. The North-American genera will be more fully characterized in an early part of the 'Biologia Centrali-Americana.' The genera which I wish to suggest for adoption for the eastern species which have been described as *Languria* are indicated also by a type species as well as in the table; it must here be observed I do not regard any species I have yet seen from Asia or Africa as belonging to *Languria* proper, of which *L. mozardi* is the type. It is not to be supposed that I have studied more than a limited number of the Asiatic species; my examination of them, so far as it has gone, leads me to expect that many more genera than are here suggested will have to be made, but that their arrangement will be much facilitated by attention being paid to the sectional characters now proposed.

Family EROTYLIDÆ.

Subfamily LANGURIIDES.

SECTION I.—Spongioso-palmati.

Tarsi (præsertim antici maris) subtus articulis tribus basalibus spongioso-palmatis, haud late ciliatis.

i. Abdominis segmentum ventrale basale lineis duabus :

a. *impressis*, brevibus ; antennarum clava

† rotundata, lata *Pachylanguria*, Crotch.

†† elongata *Metabelus*, n. gen.

(type *P. borrei*, Fowler).

††† maris femoribus leviter denticulatis. *Languriomorpha*, n. gen.

(type *L. lewisi*).

†††† elytrorum apicibus excisis *Pentelanguria*, Crotch.

b. *impressis*, longis *Tetralanguria*, Crotch.c. *elevatis* *Languriosoma*, Crotch.d. *impressis intus carinulatis* parallelis.

Oculi subtiliter granulati *Neolanguria*, n. gen.

(type *Trogosita filiformis*, Fabr.).

Oculi fortiter granulati *Cænolanguria*, n. gen.

(type *L. coarctata*, Cr.).

ii. Abdominis segmentum ventrale basale lineis nullis.

a. Head asymmetrical.

† Apex of elytra simple *Callilanguria*, Crotch.

†† Apex of elytra denticulate *Goniolanguria*, Crotch.

††† Apex of elytra not denticulate ... *Doubledaya*, White.

b. Head symmetrical.

Femora maris asperata *Oxylanguria*, Crotch.

Femora simplicia *Fatua*, Dej.

c. Oculi fortiter granulati; apex of elytra simple *Promecolanguria*, Fowler

(type *L. dimidiata*, Guér.).

SECTION II.—Trichio-palmati.

Tarsi (præsertim antici maris) subtus villosi, articulis tribus basalibus late vel saltem distincte, ciliatis.

i. Oculi subtiliter granulati ; vel modo reticulati.

a. Elytrorum apicibus denticulatis ; lineis abdominalibus nullis.

† Tibiæ anticæ maris valde sinuata *Camptocarpus*, n. gen.

(type *Trapezidera longicollis*, Mots.).

†† Tibiæ utriusque sexus rectæ, maris intus asperatæ ;

elytrorum apicibus denticulatis *Dasydactylus*, n. gen.

(type *D. buprestoides*, Gorh.).

††† Tibiæ maris intus læves ;

maris, abdominis segmento ventrali apicali haud exciso ;

femora præsertim maris, clavata... *Nomotus*

(type *N. plutonus*, Gorh.).

simplicia *Trapezidera*, Mots.

(type *T. ænea*).

utrinque asymmetricè exciso *Teretilanguria*, Crotch.

tantum emarginato *Ortholanguria*, Crotch.

b. Elytrorum apicibus oblique truncatis ; maris, abdominis segmento ventrali apicali medio rotundato

exciso *Langurites*, Mots.

simplici *Chromauges*, n. gen.

(type *L. refulgens*, Fowler).

c. Elytrorum apicibus muticis :

† lineis abdominalibus nullis ; antennarum clava

quinque-articulata *Languria*, Latr.

sex-articulata, angusta *Janessa*, Chev.

(type *L. bicolor*, Fabr.).

- †† lineis abdominalibus distinctis, cariniformibus.
Anadastus, n. gen.
 (type *L. cambodiæ*, Crotch).
- ††† lineis abdominalibus impressis divaricatis. *Stenodastus*, n. gen.
 (type *L. melanosterna*).
- d. Elytrorum apicibus *mueronatis*.
 († lineis abdominalibus nullis) *Stenolanguria*, Fowler
 (type *S. tricolor*, Fowler).
forcipatis *Meristobelus*, n. gen.
 (type *M. forcipatus*, Gorh.).
acuminatis *Acropteroxys*, n. gen.
 (type *Languria gracilis*, Newman).
- ii. Oculi grosse granulati.
 a. Tarsi, præsertim antici maris, valde hirtuli ;
 lineis abdominalibus brevibus *Crotehia*, Fowler
 (type *C. vagabunda*, Fowler).
 b. Tarsi vix hirtuli ;
 lineis abdominalibus nullis *Barbaropus*, n. gen.
 (type *Languria nyassæ*, Fowler).
 lineis abdominalibus brevibus *Microlanguria*, Lewis
 (type *Languria jansoni*, Crotch).
- iii. Oculi fortiter granulati ;
 lineis abdominalibus impressis, extus elevatis brevibus.
Cladoxena, Mots.

April 19, 1887.

Osbert Salvin, F.R.S., Vice-President, in the Chair.

The Secretary called attention to a set of eleven photographs containing representations of the principal objects of Natural History collected by the celebrated traveller Prejevalski during his recent expedition in Central Asia and an accompanying Catalogue, which had been presented to the Society's Library by Dr. A. Strauch, F.M.Z.S., and read some extracts from a letter addressed to him by Dr. A. Strauch on the subject.

Dr. Strauch stated that after Prejevalski had returned from his fourth journey, and had again given his valuable collection of Vertebrates to the Imperial Academy of Petersburg, it was determined by the Academy to have a special exhibition of all the zoological collections of Prejevalski in the new wing of the Academy buildings. The collection thus arranged contained specimens of 702 Mammals, 5010 Birds, 1199 Reptiles and Amphibians, and 643 Fishes, besides some Ethnological objects. The photographs now exhibited represented these objects as arranged for exhibition in the building of the Academy.

The catalogue, which was in Russian, contained the scientific names of the principal species so far as they had been determined.

Mr. T. D. A. Cockerell exhibited specimens of some Mollusca taken at Isleworth, Middlesex, and read the following notes:—

ARION BOURGUIGNATI, Mabille.—This species, though differing